

nucleic acid operatively associated with a regulatory sequence containing transcriptional and translational regulatory information that controls expression of said nucleotide sequence in a host cell, or wherein a genetically engineered host cell is prokaryotic or eukaryotic, or a transgenic plant transformed by nucleotide sequence that encodes a polypeptide consisting of amino acid sequence of MAPK5, and wherein over-expression of the MAPK5 ortholog in plant results in increased tolerance to abiotic stress compared to a wild-type plant, or a method for enhancing tolerance to abiotic stress, classified in class 800, subclass 289.

II. Claims 11-20, 26 and 48 drawn to an isolated nucleic acid, or wherein said nucleic acid is cDNA or RNA, or a recombinant vector comprising the said nucleotide sequence containing transcriptional regulatory information that controls expression of the nucleotide sequence in a host cell, or a genetically engineered host cell comprising said nucleotide sequence, or wherein said host cell is prokaryotic or eukaryotic, classified in class 536, subclass 23.1.

III. Claims 21-23, drawn to an antibody that specifically binds to a peptide consisting of the C-terminal portion of the MAPK5 amino acid sequence, or wherein said antibody is monoclonal or polyclonal, classified in class 530, subclass 388.1.

IV. Claims 24-25, drawn to a polypeptide which has kinase activity, classified in class 435, subclass 183.

V. Claims 29, 39, 33-35, 37, 38, 43 and 44, drawn to a transgenic plant transformed by nucleotide sequence operatively linked to a regulatory sequence that encodes RNA interference structure wherein suppression of the MAPK5 ortholog nucleic acid sequence in the plant results in increased resistance to biotic stress compared to a wild-type plant, or a transgenic plant transformed by a nucleotide sequence that encodes a polypeptide consisting of the amino acid sequence operatively linked to a regulatory sequence that controls gene expression so that expression of said amino acid is suppressed in the plant compared to a wild type plant, or a method for increasing resistance to biotic stress comprising transforming plant with said nucleic acid or a method for increasing resistance to biotic stress in a plant comprising isolating MAPK5 protein from the plant comprising immunospecifically binding MAPK5 protein to an MAPK5 antibody, classified in class 800, subclass 285.

VI. Claim 39, drawn to a mitogen-activated protein kinase produced by a transgenic plant, classified in class 435, subclass 183.

VII. Claims 40, 44 and 50 drawn to a method for evaluating a plant to abiotic stress comprising treating a plant with abiotic stress, or wherein the isolating step comprise immunospecifically binding MAPK5 protein to an MAPK5 antibody, classified in class 435, subclass 69.3.

VIII. Claims 41, 44 and 49 drawn to a method for evaluating a plant for resistance to biotic stress comprising treating a plant with a pathogen, wherein the isolating step comprises immunospecifically binding MAPK5 protein to an MAPK5 antibody, wherein a kit for screening a plant for susceptibility to biotic stress comprising the nucleic acid molecule encoding MAPK5 whereby the changes in polymorphic patterns of MAPK5 indicates the plant is susceptible to biotic stress classified in class 435, subclass 69.3.

IX. Claim 47 drawn to an isolated nucleic acid probe that comprises a label and a nucleotide sequence that encoding a polypeptide, classified in class 536, subclass 23.2.

The Examiner contends that the inventions of Groups I-IX are distinct, each from the other.

In response, Applicants provisionally elect with transverse the invention of Group I, Claims 1-10, 26-28, 31, 32, 35, 36, 38, 42, 44 and 47.

With respect to the Examiner's division of the subject matter of Claims 1-50 into nine separate groups, Applicants respectfully transverse. Applicants respectfully request the Examiner to modify the restriction so as to place Claims 1-50 within a single group.

The present invention provides a method for increasing tolerance to abiotic and biotic stress in plants using mitogen-activated protein kinase. Applicants believe that the mechanism by which the product of this method for evaluating stress conditions in plants represents an intricate web of knowledge and continuity of effort.

The groups of claims do not represent distinct inventions, and thus merit examination in a single application.

Even assuming *arguendo* that Groups I-IX represent distinct or independent inventions, Applicants submit that to search the subject matter of the nine groups together would not be a serious burden on the Examiner. The M.P.E.P. § 803 (Eighth Edition, Rev 2, May 2004) states:

If the search and examination of an entire application can be made without serious burden, the examiner >must<** examine it on the merits, even though it includes claims to distinct or independent inventions.

In the alternative, Applicants request the Examiner to combine Groups I, II, V and IX into a single group relating to isolating and expressing MAPK5 for studying stress tolerance in plants. In addition, Applicants request the Examiner to combine Groups III, IV, VI, VII and VIII into a single group relating to methods for enhancing tolerance to abiotic stress or increasing resistance to biotic stress in a plant.

Applicants submit that the subject matters of Claims 1-10, 26-28, 31, 32, 35, 36, 38, 42, 44 and 47 (Group I), Claims 11-20, 26 and 48 (Group II), Claims 29, 39, 33-35, 37, 38, 43 and 44 (Groups V) and Claim 47 (Group IX) merit examination in a single group. For one to properly search the subject matter of the claims of Group I, one would necessarily have to search art relating to subject matter of the claims of Group V. Specifically, class 800, subclass 289 and class 800, subclass 285, are both indented under class 800, 278. Therefore, Applicants submit that a search of Group I or V would largely overlap with a search for the subject matter of Claims 1-10, 26-29, 31-39, 42, 43, 44 and 47. Applicants also submit that a search of Group II or IX would largely overlap with a search for the subject matter of Claims 11-20, 26, 47 and 48 because Group II is classified as 536, subclass 23.1 and Group IX classified as

536, subclass 23.2 is indented under class 536, subclass 23.1. Applicants request the Examiner to modify Groups I, II, V and IX into one group.

Applicants further submit that the subject matter of Claims 21-23 (Group III), Claims 24-25 (Group IV), Claim 39 (Group VI), Claims 40, 44 and 50 (Group VII), and Claims 41, 44 and 49 (Group VIII) merit examination in a single group. Applicants submit that Group IV and VI are classified as 435, subclass 183 and Groups VII and VIII are classified as 435, subclass 69.3. Specifically, it would not be undue burden for the Patent and Trademark Office to search two similar groups at two different times. Further, Group III must be searched under class 435 along with Groups IV, VI, VII and VIII. Therefore, Applicants request the Examiner to modify Groups III, IV, VI, VII, VIII and IX into one group.

Applicants retain the right to petition from the restriction requirement under 37 C.F.R. § 1.144.

CONCLUSION

Applicants respectfully request that the foregoing remarks be entered and made of record in the file history of the application. An early allowance of the application is earnestly requested.

Respectfully submitted,

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